UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

Distr.: GENERAL

E/ECA/CM.17/CRP.7
15 April 1991

ENGLISH
Original: FRENCH

ECONOMIC COMMISSION FOR AFRICA

Twelfth meeting of the Technical Preparatory Committee of the Whole

Addis Ababa, Ethiopia
29 April to 7 May 1991

ECONOMIC COMMISSION FOR AFRICA

Twenty-sixth session of the Commission/ seventeenth meeting of the Conference of Ministers

Addis Ababa, Ethiopia
9 to 13 May 1991

ECDC/TCDC PROJECTS OF SOME AFRICAN ECONOMIC GROUPINGS THAT COULD BE IMPLEMENTED IN CO-OPERATION WITH DEVELOPING COUNTRIES OUTSIDE OF THE REGION

91-603

INTRODUCTION

1. Far from replacing the North-South dialogue which aroused much hope in the 1970s, technical co-operation among developing countries (TCDC) and economic co-operation among developing countries (ECDC) are intended to be the building blocks of a genuine partnership that will enable the countries of the South to become a homogeneous and cohesive bloc that will have something to offer to countries of the North in exchange for their technical and financial assistance. These two concepts were defined most elaborately in the Buenos Aires Plan of Action on TCDC adopted in 1978 and the Caracas Programme of Action on ECDC adopted in 1981.

2. In spite of the disappointing results of the North-South Dialogue which should have given a further boost to TCDC and ECDC, both seem to be flagging. This pattern has been taking shape in spite of the fact that the Group of 77 exists as an institutional framework to fuel the process. The lack of genuine progress might seem largely to be attributable to the fact that the discussions relating to TCDC and ECDC are limited to official circles. The true practicians of co-operation such as socio-professional bodies, heads of enterprises, research fellows and academicians have rarely been associated in the effort. And yet, both TCDC and ECDC still hold the promise and potential with which they began. Co-operation among developing countries can be lastingly and effectively revitalized if the lengthy debate which rarely leads to action is done away with and the focus centred on concrete projects that are implemented, preferably, by several countries.

3. Africa has everything to gain by developing TCDC and ECDC and should therefore initiate action accordingly. In fact, it has already begun by setting up appropriate structures at subregional and regional levels but those mechanisms operate on too much of an ad hoc basis for them to make a lasting impact on TCDC and ECDC activities in Africa.

4. The purpose of this paper is to propose how specific projects, initiated by African economic groupings might benefit from the technical and financial assistance of other developing regions. Naturally, this approach should fall within the context of TCDC/ECDC activities that have been going on for some time in Africa and the vistas they have opened.

I. TCDC/ECDC IN THE SERVICE OF AFRICA: POTENTIAL AND SCOPE

5. Even though no systematic inventory has been compiled on TCDC and ECDC, it would appear that Africa is not making full use of the prospects they offer. Few initiatives have been taken at the multilateral level in recent years. In fact, most TCDC and ECDC activities in Africa are conducted bilaterally. In both cases, certain factors have been observed to restrain the development of TCDC and ECDC.

A. Factors limiting the growth of TCDC/ECDC in Africa

6. In the first place, it appears that lack of information is not making it possible for African countries to co-operate with other developing regions. Obviously, there are publications of the Group of 77 or the United Nations Development Programme (UNDP) which regularly or otherwise provide information on the avenues for co-operation among developing countries. The dissemination of such information is, however, virtually restricted to government circles and potential beneficiaries and practicians of TCDC/ECDC (research institutes, academicians and businesses) do not seem to have sufficient access to the information in order to use it to good advantage. Sometimes, the information is too general to be of practical use.

7. What is more, the problem of financing TCDC/ECDC activities limits the prospects for co-operation among developing countries. Even when they have mastered a technology that could be of service to other developing countries, some third world countries do not have the financial resources to transfer such technology. Since the potential users of such technology are themselves are poor, the situation becomes one of a vicious circle that only the intervention of a third party can break. Since the bilateral assistance of developed countries mostly comes with strings attached, it cannot serve as an engine for TCDC/ECDC. On the other hand, multilateral funding agencies could in theory promote TCDC/ECDC activities but because the projects in which they assist are open to international competition, developing countries are seldom able to capture the market. The length of time that companies of the North have been established in many developing countries gives them a ground advantage through their knowledge of local conditions and the possibility of spreading their fixed charges over several activities.

8. At this point a third factor, more subtle but in certain cases crucial, comes into play. This is the propensity of many developing countries to accord preferential treatment to partners from the North that they know very well. This attitude has instilled a sort of disregard for technologies less sophisticated than those proposed by the developed countries but which are reliable and often less expensive and better suited to local conditions. In some degree, this attitude can be explained by the lack of information mentioned earlier. No one likes to risk transacting business with someone they know little about because, very often, such people do not feel the need to make themselves known outside of their immediate environment.

9. Finally, third world enterprises seem to offer some of their potential clients few financial guarantees. Should there be a technical failure, the chances of recourse are slim. The preference therefore goes to well known trading partners and the force of habit gets to be supported by technical and financial arguments.

10. All these factors and more go to thwart TCDC and ECDC efforts. And yet, African countries in particular have much to gain from such co-operation.

B. Potential contribution of TCDC/ECDC in Africa

11. The areas in which Africa could co-operate with other developing regions are extremely varied.

12. In science technology, many third world countries outside of Africa now have research institutes whose work is being applied on a major scale. In agriculture for example, the similarity of the African ecosystem to that of other developing countries where research has advanced could make it possible to use the findings with little, if any, effort at adaptation. What is true of agricultural research equally applies to research in other areas. That would save Africa from having to conduct costly research whose findings may not be conclusive at a time when Africa lacks research facilities both in terms of infrastructure and manpower.

13. With regard to industrial development, certain developing countries have accumulated solid experience in the design of small- and medium-scale manufacturing plants. Beside the fact that such plants are better suited to the market size in many African countries than competing plants developed in the developed countries, they often use a rudimentary but reliable technology that can be easily maintained. The importation of such plants makes for the limitation, if not the actual elimination, of excess capacity due to the over scaling of industrial plants relative to market size.

14. Similarly, in the field of transport, road building techniques have been developed which are perfectly suited to tropical regions where the road infrastructure deteriorates rapidly under climatic conditions.

15. Finally, in the area of training, Africa could benefit on a larger scale than it does now from the training structures existing in some developing countries. There would be a two-fold advantage to this:

(a) In terms of the strong likelihood that the training would be more suited to the situation in Africa than that provided in the developed countries because of the similarity of the conditions prevailing in Africa and in other developing regions; and

(b) In that there would be less of a risk of the trained African elite seeking domicile in the countries of training. The brain drain would become less acute.

16. These few examples are enough to show that Africa could usefully develop its TCDC/ECDC programme. It is in this spirit that the following proposals are made in support of projects initiated by two economic groupings in Central Africa.

II. TCDC/ECDC IN THE SERVICE OF SUBREGIONAL ECONOMIC INTEGRATION: SOME PROJECTS OF THE CENTRAL AFRICAN ECONOMIC GROUPINGS

17. As stated earlier, the benefits of TCDC/ECDC can only further the objective of economic integration in Africa. The following projects are among those which could benefit from co-operation with other developing regions. Thery are only indicative because it would have been impossible to describe more than a few of the host of projects being implemented by African economic groupings. They were selected on the basis of the following criteria:

(a) They form part of the work programme of the economic groupings concerned. This does not mean in any way that they are accorded greater priority than those not mentioned here;

(b) They contribute to the development of local resources either from the beginning of the project or at a later stage when imported inputs have to come into the project;

(c) They do not duplicate a similar project of a larger economic grouping within the same subregion but rather can be expanded to cover the subregion;

(d) Other Third World countries have proven experience in the sector concerned, meaning that they master the technology and the production cost are competitive; and

(e) Finally, the investment outlay does not exceed the capacity of potential partners.

18. Before continuing, it would be appropriate to specify what machinery can be used to promote existing or planned TCDC activities in Africa. The main characteristics of the two economic groupings concerned, namely the Central African Customs and Economic Union (UDEAC) and the Economic Community of the Great Lakes Countries (CEPGL) will then be described because those characteristics shape, to some degree, the orientation of their respective work programmes.

A. Machinery for promoting TCDC projects and activities

1. National and subregional focal points

19. National investment or business promotion centres and the economic integration organizations will become respectively national and subregional focal points for the programme of Technical Co-operation among Developing Countries. In this regard, they will be responsible for developing the various projects which will be eligible for inclusion in this programme, conduct the necessary studies to enable the partners to make a decision, get the approval of member countries to promote the projects, in collaboration with the Chambers of Commerce and Industry, contact partners in the member countries, organize them and get them to adopt a plan for the establishment of multinational enterprises, contact financing institutions and submit to them bankable project documents for obtaining local financing and the participation of firms in the newly-industrialized countries in the constitution of the capital of the enterprise.

2. Regional focal point: The South-South Partnership Promotion Centre

20. To respond to this need, the African Development Bank (ADB), the Economic Commission for Africa (ECA), the United Nations Industrial Development Organization (UNIDO), the Food and Agriculture Organization of the United Nations (FAO), and the United Nations Development Programme (UNDP) have decided to create an enabling instrument known as the South-South Partnership Promotion Centre whose raison d'être is to serve as a source of technological, economic and trade information on opportunities open in the countries of the South. The South-South Partnership Promotion Centre will be the regional focal point for the promotion of TCDC projects and activities.

21. The South-South Partnership Promotion Centre is an initiative, unique in its approach towards the integration of the private and mixed economy sectors in matters concerning economic and technical co-operation among developing countries. It seeks to link African entrepreneurs with those from other developing countries in Asia and the Pacific, Latin America, the Caribbean and the Middle East. It is an initiative that recognises the weak information and commercial infrastructure with which the private sector has to cope. The Centre would actively seek Multinational Production Enterprise (MPE) and Joint Venture (JV) opportunities to galvanize the private sector into propelling their respective governments to dismantle identified political, economic and other infrastructural barriers.

22. The objective of the South-South Partnership Promotion Centre is to facilitate the exchange of information on technology, expertise, finance and management available in countries of the southern hemisphere. The Centre aims at harnessing for development the vast resources of the private sector by:

(a) Providing a comprehensive information data base on manufacturers and suppliers in the South to aid direct sourcing and trade;

(b) Promoting the formation of Multinational Production Enterprises and Joint Ventures;

(c) Assisting with the preparation of comprehensive feasibility studies for MPEs;

(d) Providing information on legal and technical services on matters concerning MPEs and JVs;

(e) Providing training services to upgrade the managerial and consulting capacities of the subregion; and

(f) Attracting funds for studies and project implementation.

23. The indicative work programme of the South Partnership comprises a broad number of activities which are designed to achieve the multi-faceted objectives of the institution. The most prominent of these centre on:

(a) A fully operational centre with a business network covering individual enterprises, entrepreneurs, Chambers of Commerce and other professional organizations. Additionally business-related institutions including development finance corporations, commercial banks, export/import institutions and relevant government entities;

(b) A South-South project study fund. A major cause of failure of most projects in developing countries can be attributed to poor project conceptualization and investigation. Because of the need for hard currency for such studies, entrepreneurs generally shy away from the thorough and comprehensive analysis of projects required in today's competitive world. The South-South Project Study Fund will be established to address this inadequacy;

(c) A South-South Project Bank. An active search for viable projects for which feasibility studies will be prepared, primarily for presentation to private sector entrepreneurs through the channel of the "Investment Forum". Each national and subregional focal point would send to the South Partnership Centre copies of pre-feasibility and feasibility studies that it intends to promote within the framework of TCDC. The Centre would, accordingly, constitute a portfolio of projects which will be eligible for joint financing by African entrepreneurs and their partners in the newly-industrialized countries;

(d) The South-South Investment Forum would be the crucible for the various interactions among entrepreneurs of Africa and other developing countries of Asia and the Pacific, Latin America, the Caribbean and the Middle East. It would be used for matching the supply and demand for investment funds in selected priority sectors. The forum will also be responsible for South-South trade promotion activities;

(e) In the South-South Financing Scheme with regard to the financing of multinational projects, the ADB will have to assist African promoters financially to constitute their share of the capital for the mobilization of funds from the newly-industrialized countries. The African Development Bank could also transfer some projects of less importance to subregional development banks such as the West African Development Bank and the Development Bank for Central Africa by providing them with the necessary information on source of technology, possible partners in the newly-industrialized countries, etc.;

(f) For the South-South Consultancy Network, the South is endowed with highly qualified experts in almost all fields of interest. Unfortunately, they exist as little islands of knowledge, hardly communicating with one another. A network of available consultants in the

South would be established. As much as possible, these consultants would be used for the project studies identified by the project bank as well as for any specific assignments;

(g) In the matter of a South-South Technology Service, it has been demonstrated that the South has developed appropriate technology in key areas, adaptable to the socio-cultural environment of the South. An inventory of all key enterprises, financial institutions and technologies available in the South will be maintained. In view of the weak information infrastructure and inadequate managerial capacity in the South, assistance will be provided, where requested, on know-how acquisition, retention services including, the negotiation of joint-venture agreements, the identification and recruitment of specialists, etc.;

(h) A South-South Procurement Service is intended to make available the names of manufacturers in the South together with acquisition condition of goods and services and to expedite the procurement procedures for projects that would be implemented by the Centre;

(i) South-South Training Programme: Project studies and requests from enterprises would reveal critical areas of management and other deficiencies leading to the need for group and other specialised training;

(j) South-South Business Newsletter: The information gap is a serious obstacle to the development of business co-operation. Businessmen in the South have a greater knowledge of business opportunities and contacts in the countries of the North while their knowledge of the countries in the South is often minimal. It is therefore necessary to publish a newsletter with information on relevant and interesting business opportunities in order to fill the information gap among developing countries thus promoting business co-operation.

B. Economic groupings and their projects

1. Central African Customs and Economic Union (UDEAC)

Membership:	Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea and Gabon	
Surface:	3,020,000 km²	
Population:	22.3 million	
Total GDP:	$US 17 billion	
Per capita GDP:	$US 762	
Main products:	Petroleum, timber, manganese, uranium, diamonds, coffee, cocoa, cotton, tubers, millet and sorghum, palm oil, livestock products	
Exports (1987):	$US 4.1 billion	
Composition (in %):	- fuel, metals and minerals	60.3
	- other primary commodities	27.6

	- machines and transport equipment	7.3
	- other manufactures	4.8
Imports (1987):	$US 3.8 billion	
Composition (in %):	- food products	15.7
	- fuel	2.5
	- other primary commodities	3.3
	- machines and transport equipment	35
	- other manufactures	43.5

Natural resources: Petroleum, timber, manganese, iron, uranium, bauxite.

(a) Project for the establishment of a community pharmaceutical company in Bangui, Central African Republic

(i) Background

24. For some 20 years and in contrast to the situation prevailing before the independence of Equatorial French African countries, the share of the public authorities and of missionary agencies in the supply of medicines has considerably diminished, thus enabling private concerns to provide, on average depending on the country, 60 per cent of the medical supplies.

25. To cope with the increasing need and in implementation of the historic agreements to share community projects among the member States of UDEAC, it was decided in 1975 to establish in Bangui, Central African Republic, a community pharmaceutical industry.

26. Apart from the obvious social and economic importance of the project, the priority and strategic importance of the operation has been recognized and affirmed both by the political authorities and by the International Pharmaceutical Association (IPA) and the World Health Organization (WHO).

27. From 1975 to 1984, several designs of the manufacturing plants were considered and abandoned because they were unsuited to the technical and scientific environment of the Central African subregion.

28. In 1985, under the aegis of GTZ, the Integration consultancy firm prepared a feasibility study for the manufacture of 23 generic drugs 14 of which came in the form of tablets (at a rate of 350 million per year) and nine in the form of capsules (at a rate of 10 million per year).

29. In December 1986 the UDEAC authorities meeting at Bata in Equatorial Guinea requested, after having considered the GTZ report, that the secretariat should conduct an additional economic study excluding the possibility of doing without gifts and cheap procurement.

30. When the study confirmed the viability of the project, Agreement No.5/88 UDEAC-316 was signed on 8 December 1988 to set up the community pharmaceutical company.

31. In June 1989, a meeting of prospective shareholders was held in Bangui to consider and decide on the resources, procedures, conditions and methodology for implementing the project.

A draft plan of action was approved and a study commissioned with the following main terms of reference.

(ii) Objectives of the study

32. The study was expected to enable the scale of the project on the establishment of a pharmaceutical industry in Bangui to be modified. The range of medicines and the production capacity were to meet, eventually, the essential needs of people in the UDEAC subregion for medicine. The study was to conclude with an assessment of the technical, financial and economic feasibility of the project.

33. The production scheme was to be implemented in two gradual phases:

(a) Phase one consisted of setting up the tablet manufacturing plant in two stages the first of which would meet the needs of the Central African Republic estimated at 50 to 60 million tablets per year. The second stage was to enable the needs of the UDEAC subregion estimated at 350 million tablets per year to be met; and

(b) The second phase was to consist of expanding activities to capsule production.

34. In keeping with the growth of requirements and the results achieved after the first two phases, the manufacture of injectable solutions (possibly made from galenic preparations) could be envisaged in a third phase that did not form part of the project. The study covered essentially the following aspects: (a) market study; (b) technical study; (c) investments (equipment, infrastructure, rolling stock and logistics); (d) financial requirements; (e) management and organizational structure; (f) economic and financial analysis; and (g) accompaning measures.

(b) Restructuring of the UDEAC textile subsector

35. The textile sector is globally being restructured in line with a new division of labour. The countries of South-East Asia are flooding the world market with low-cost products which are compelling Europe in particular to relocate its enterprises.

36. Raw material prices, after having fallen in 1985, now show that cotton prices are regaining steadly. The global volumes of cotton used are also rising and enterprises in the subsector are now stabilizing.

37. In UDEAC, the textile branch of industry has a workforce of more than 500,000 people distributed as follows:

(a) Preproduction (ginning of cotton seeds and processing into cotton fibre): 350,000 to 400,000 people producing some 105,000 tons cotton fibre;

(b) Production, comprising the following successive stages:

(i) First stage processing: spinning

(ii) Second stage two processing: cloth making by weaving or knitting

(iii) Third stage processing: refinement (whitening, patterning, dyeing, printing, finishing and readying).

38. The sector is currently represented by six companies: three integrated companies covering the three stages of processing and three companies confining themselves to third-stage processing after importation of raw material. In 1988, a UNIDO study evaluated needs at: (a) 12,800 tons for 54,000 tons of textile demand; (b) 85.6 km² of woven material as compared to demand for 196.2 million m² (with 1 m² weighing 170 grammes on average); (c) 6.5 million knitted items as compared to a demand for 124.5 million units (one unit weighing 120 grammes).

39. The post-production sector which means clothes making has a few officially certified industrial units; the sector is largely dominated by informal businesses which employ some 100,000 to 150,000 persons.

40. After a sharp drop in 1985 bringing the various States to review producer prices, cotton prices steadied and, after the pre-production sector was reorganized, production seemed assured for the future.

41. Such assurance would have been of greater magnitude if the cotton branch of industry was integrated but that is far from being the case. In addition to the inadequacy of processing industries which account for only 20 per cent of the entire market according to the aforementioned study, the sector is in the throes of a crisis with six of the enterprises mentioned earlier all fighting for their survival.

42. The sector gains its importance not only from the jobs it creates directly but also from the fact that it provides steady jobs both in the pre-production and post-production sectors. More than 500,000 jobs are involved and the sector should therefore be classified as strategic and sensitive.

43. The UDEAC textile sector has therefore been experiencing a crisis for years. The causes of the crisis are many but the main ones are the following:

(a) Overly short repayment periods for loans borrowed for investment;

(b) Poor targetting of the market;

(c) Inflexible spinning and weaving systems;

(d) High production cost;

(e) Lack of commercial aggressiveness;

(f) Narrowing of the market as a result of declining purchasing power;

(g) Adverse effect of the exchange rates of inconvertible currencies of neighbouring countries;

(h) Occasional dumping by countries exporting textile products to the UDEAC zone.

44. On account of this situation, the member States of UDEAC plan to take some measures to revitalize activities in the textile subsector of the subregion.

45. Proposals for revitalizing the sector are aimed both at refurbishing the market and restructuring the enterprises.

(i) Refurbishing the market

46. The measures advocated for refurbishing the market include the following:

(a) The banning of second hand clothes dealing on the entire of UDEAC territory in order to secure the revitalization of industrial clothes making;

(b) Strict enforcement by member States of existing legislation;

(c) The lowering of selling prices of locally manufactured products through the reduction of production cost and investment in modern machinery;

(d) Protection of the market by instituting provisional measures for differential tax treatment under the single tax. The idea is to tax at 7 per cent materials produced with imported raw materials and at 3 per cent those manufactured with local raw materials; and

(e) Double checking of textile products.

(ii) Restructuring of enterprises

47. Detailed study of the market: A detailed study of the UDEAC market per country and per cotton textile product will be conducted to ascertain the composition and volume of current and potential demand together with the production capacity required to meet both.

48. Study on the restructuring of existing enterprises: Subsequently, after the situation of finances, equipment and infrastructure already existing has been analyzed, proposals will be made for product diversification taking account of the market and of any possible technical changes that might increase the quality and competitiveness of the products.

49. Study on energy and transport costs: Because of their bearing on unit prices of textiles produced in the subregion as compared to competing textiles, studies should be conducted on the actual costs of these factors in order to apply to the textile industry a tariff that excludes the social costs of normal tariffing.

50. Study on the financing of the textile sector: Owing to the poor results achieved by enterprises in the sector as a whole, and the excessive charges that financial costs attract by international standards, a study will be conducted to set up an arrangement for softening the terms of loans in order make their rates and duration compatible with the constraints of the sector.

51. Study of the export markets: Taking into account the availability and quality of local cotton and the price fluctuation of this product on the world market, efforts should be made by the public authorities and the industries to substitute the export of semi-finished and finished goods for that of raw cotton as to increase local value added.

52. Study on integration of the textile sector: Measures for regulating the market will be considered with a view to instituting an import taxation system that does away with the adverse effect of dumping and subsidization by major exporting countries so as to promote the integration of the various stages of textile processing in the subregion.

53. The experience acquired by certain third world countries in the textiles business and which gives them an awesome edge on the world market can benefit UDEAC member States in their endeavour to refurbish the textiles subsector.

(e) Development of the glass-making industry in UDEAC

54. This project is focused on the reorganization of the Congolese glass-making company (SOVERCO) in order to meet the needs of the UDEAC market and, if possible, that of neighbouring countries.

(i) The UDEAC market

55. The study of the UDEAC glass market based on consumption revealed the following tonnages of bottles used in 1980:

Cameroon	-	338,962 tonnes
Central African Republic (CAR)	-	26,224 tonnes
Congo (PRC)	-	58,897 tonnes
Gabon	-	44,412 tonnes

56. If account is taken of the bottle replacement rate of about 5 per cent, the tonnes of bottles to be ordered from bottle making factories in 1980 were:

Cameroon	-	16,948 tonnes
Central African Republic	-	1,311 tonnes
Congo	-	1,945 tonnes
Gabon	-	2,220 tonnes
Total		23, 424 tonnes

This figure happens to correspond to the orders of magnitude observed.

57. Another statistical study conducted on the production of beer and non-alcoholic drinks revealed the following mean growth rates from 1980 to 1983-1984:

Cameroon	-	10 per cent
Central African Republic	-	0 per cent
Congo	-	12.5 per cent
Gabon	-	10 per cent

58. Applying these growth rates to the preceding tonnages, the UDEAC market in 1985 (excluding Chad and Equatorial Guinea) would have needed the following tonnages (in round figure).

Cameroon	27,500
Central African Republic	1,500
Congo	9,000
Gabon	3,500
Total	41,500 tonnes in 1985

59. Now assuming that of these markets, SOVERCO meets virtually the entire demand of Gabon, the Central African Republic and the Congo and only 10 per cent of the Cameroonian market, the figures will be the following:

Cameroon	2,750
Central African Republic	1,250
The Congo	8,000
Gabon	3,000
Total	15,000 tonnes in 1985

60. This roughly corresponds to SOVERCO sales forecasts for the second crop season excluding the Cameroonian market which has not been taken into account. These figures go to show that there is a market for SOVERCO within UDEAC.

(ii) Markets outside UDEAC

a. Central African markets outside of UDEAC

61. These are mainly the markets of Zaire and Angola which are geographically near.

62. No accurate data could be secured on them but SOVERCO plans to export 500 tonnes of textiles a year of textiles to Zaire and nothing to Angola. The export target appears to be very modest.

b. West African markets

63. For the West African markets, a comprehensive and detailed study was conducted in 1984 on behalf of CEAO. The results provide grounds for hoping that some 20,000 tonnes per year could be exported, half of that to Côte d'Ivoire alone. There is currently no blown glass production factory in the six countries of CEAO, Benin and Togo. Therefore SOVERCO might well prospect this potential market. If 25 per cent of this market is considered attainable, that works out at more than 5,000 tonnes per year whereas the enterprise plans to export no more than 1,000 tonnes per year to that subregion.

64. There should be no marketing problem for SOVERCO's output. If there is a problem of capturing of markets, this is only because of the prohibitive selling price which rules out any attempt at doing business. This aspect should therefore be tackled as a matter of priority if the enterprise is to have a competitive structure. The Cameroonian market alone accounts for 70 per cent of the total UDEAC market and with SOCAVER, Cameroon has a blown glass manufacturing plant. It will be worth finding out what SOCAVER plans to pursue as its community strategy.

(d) General information on nitrate, phosphate and potassium fertilizer

65. Only export crops and a few industrial crops are treated with fertilizer and other agricultural inputs. Food crops are still grown mostly by traditional means but efforts are being made to develop cereal cultivation in a modern way.

66. The price of fertilizer delivered to farmers is still very high because the product is imported in bags in small quantities and has to be transported over long distances by road and/or rail. Food crop farmers have little access to credit facilities. The agricultural extension and loan granting system has been performing well in the case of cotton and coffee. The rural exodus is impeding extension efforts to teach farmers how to use fertilizer. The following remarks apply to specific countries.

67. In the cotton-producing countries of Cameroon, the Central African Republic and Chad, the world crisis is jeopardizing crop development and the land areas cultivated and fertilized are becoming reduced. In the oil producing countries, the fall in petroleum revenue is seriously jeopardizing agricultural development.

68. Cameroon accounts for about three quarters of the UDEAC fertilizer market and the demand of the subsidized sector is met only to the extent that national budgetary exigencies allow. The system of subsidised fertilizer distribution is rendered cumbersome by administrative supply schedules which are out of timing with the requirements of the cropping season. The lack of stock-piles leads to delays in fertilizer application and to losses. For Cameroon, the study was based on the objectives of the sixth development plan which set growth targets generally lower than those of the preceding plan.

69. In the Central African Republic, the limitation of cotton planted areas reduces the forecast relative to the 1985-1990 five-year plan. In contrast, ADECAF is making efforts to develop fertilization and the forecasts have been revised upward as compared to what was calculated on the basis of plan objectives.

70. In the Congo, the development of state farms is jeopardized by budgetary difficulties.

71. In Chad, food problems and political uncertainty (national defence requirements) are weighing on the economy and worsening the cotton deficit. The country has great potential for irrigated farming but this is expensive to develop and entirely financed from foreign aid. The selling price of cereals cultivated is high. Cereal growing in the traditional sector suffers from the lack of price support resources such as credit and storage capacity.

72. The information secured on the agricultural output of Equatorial Guinea does not justify any changes being made in the estimates calculated from the documents of the national commission set up to prepare the international donor conference for the economic recovery and development of Equatorial Guinea held in 1982.

(i) Demand projections

73. The demand projections have been made on the basis of two assumptions, one high and the other low so as to secure a range within which the long-term situation up to 1995 can be estimated.

74. The high assumption is that of a rather voluntaristic scenario based on the development plan programmes of UDEAC countries and extrapolations thereon. The assumption implies the fulfilment of a number of conditions for promoting the development of fertilization in such areas as the use of other necessary inputs, agricultural research, extension development, the easing of certain supply procedures and lower fertilizer prices.

75. The low assumption is one of scaling down the forecast of the high assumption and taking current economic conditions into account as warranted for example by the announced reduction of budget appropriations for development programmes following the decline of petroleum revenue in the producing countries and following the crisis on the international cotton market.

76. The high assumption corresponds to a mean growth rate of 6.8 per cent per year from 1985 to 1995 while the low assumption corresponds to a 5.3 per cent growth rate reflecting consumption over the last ten years.

77. In the user consumption forecasts for ammonium sulphate, the idea is to make a substantial substitution with more concentrated urea from 1990 to 1995 so that produce tonnage growth becomes less than that of plant nutrients which is more significant. Indeed, as compared to nutrient tonnages, the annual mean growth of consumption from 1985 to 1995 is estimated at 7.9 per cent (high assumption) and 6.4 per cent (low assumption).

78. Nitrate fertilizer consumption in Zaire, counted in nitrate nutrients, decreased regularly, falling by half from 1980 to 1983 while potash consumption fluctuated by 100 to 200 per cent over the same period.

79. The consumption of Angola which has been admitted to ECCAS as an observer decreased in both nitrate and potash nutrients over the same period.

80. The consumption of UDEAC countries accounts for 80 to 90 per cent of that of the subregion as a whole and the short-term export potential is severely limited, remaining still a matter of potential.

(ii) Inventory of raw material resources

81. In the UDEAC countries, the known raw material resources needed to manufacture fertilizer may be summarized as follows:

a. Nitrate fertilizer (natural gas resources)

82. No information could be obtained on Cameroon, the Congo and Chad. According to foreign sources, Cameroon has 94 billion m^3 of proven reserves and 30 billion m^3 of probable reserves. No evaluation has been found as to Chad's resources in natural gas but the same sources have it that as of 1 January 1986, the Congo had 70 billion m^3 of natural gas.

83. In Gabon, the natural reserves were reported to have been several tens of billions of m^3 as of 1 January 1986. Substantial accumulations have recently been discovered but are not included in this amount. Engineering consultancy firms are in the process of evaluating the reserves.

b. Phosphate fertilizers

84. In the Congo, calcium phosphate reserves amounting to 1,300,000 tonnes have been identified on land but have not been considered economically viable to exploit. Some deposits discovered offshore are currently being evaluated.

85. In Gabon, the research conducted to date has not shown any economically exploitable deposits but all the findings made during petroleum prospection will shortly be summarized.

86. The phosphate reserves in uranium-bearing calcium deposits discovered in the Central African Republic are estimated at 1 million tonnes of phosphoric acid $P_2 0_5$ but their exploitation cannot be justified economically at the moment because of the current state of the uranium market.

c. Potash fertilizers

87. Substantial reserves can be found in the coastal sedimentary basins between Angola and Gabon. The deposits in Gabon are not considered exploitable but the synthesis of findings mentioned earlier also covers potash. The most interesting reserves began to be exploited in the Congo from 1969 until 1977 when operations were stopped because the mine had been flooded.

88. Exploitation on another site may be resumed following a programme of studies and exploration being conducted. The reserves that could be recovered at the Holle Mine were about 17 million tonnes counted in K_2O.

89. Other minerals such as a few traces of pyrite, from which sulphur can be made, have been discovered in Chad. Outcrops of limestone are being exploited at Madingu in the Congo to be used on acidic soils. There are deposits of dolomite (magnesium carbonate) which have yet to be evaluated in the region of Lastourville in Gabon.

(iii) Analytical study of existing industries

90. The only industry which has been identified in the UDEAC countries is the Cameroonian Fertilizer Company which is currently being liquidated. In October 1981, the Company could not pay its debts and had to stop operations. The consultant was able to secure an operating account for the 1980/1981 financial year and financial reports on the situation of the company prepared at the end of the 1979/1980 and the following financial year. From those documents, the following can be observed:

(a) From a technical stand point, no document worthy of being referred to as a technical report has been written. Therefore only two things can be said:

(i) Selection of manufactures: the ammonium sulphate (AS) is of little importance because of its low nitrogen content (21 per cent) and has been replaced almost everywhere with urea (46 per cent) or ammonium nitrate containing 33 per cent nitrogen. Indeed, the use of ammonium sulphate in the UDEAC countries has been yielding ground to that of urea. Similarly, the choice of simple super-phosphate (SSP) of lime was unfortunate since the product is little used in Cameroon. What is more, it contains only 18 per

cent phosphoric nutrient and is generally being replaced by triple super-phosphate to a degree of 45 per cent;

(ii) Equipment design: 20-10-10 fertilizer containing a substantial proportion of urea was manufactured in a granulation plant by dry steaming and this led to frequent stoppages because of the need to scour and clean out the system. The formula was replaced by a less concentrated process which required slightly higher dosages.

(b) From an economic and financial point of view, the financial reports and operating accounts showed the following:

(i) Supplies and materials budget line alone during the 1980-1981 financial year was roughly equal to the total output line. Similarly, the 1981-1982 budget set sales prices of which the proportional expenses component was in certain cases comparable and in other cases higher than the sales price (set at a par with imported products);

(ii) The investment cost far exceeded the estimates used to prepare the feasibility study as a result of a whole series of circumstances. Furthermore, the plant was repaired and rehabilitated in 1979-1980. It has never functioned at full capacity and, for all these reasons, the fixed costs per ton of output was high;

(iii) As the Cameroonian Fertilizer Company was not operating under tariff protection, it could not survive without constant operational subsidies in order to break even.

91. On account of the foregoing, plans have been made for the immediate establishment of a chemical fertilizer mixing, bagging and distribution plant within UDEAC.

2. Economic Community of the Great Lakes Countries (CEPGL)

Membership:	Burundi, Rwanda, Zaire	
Area:	2,399,000 k^2	
Population:	44 million	
Total GDP:	$US 8.1 billion	
Per capita GDP:	$US 184	
Main products:	Copper, coffee, tea, timber, tubers, palm oil and diamonds	
Exports (1987):	$US 1.8 billion	
Composition (%)	- fuel, minerals and metals	24.3
	- other primary products	68.6
	- machines and transport equipment	0.1
	- other manufactured products	7.0

Imports (1987): $US 3.8 billion		
Composition (%)	- food products	12.3
	- fuel	7.6
	- other primary products	5.6
	- machines and transport equipment	30.0
	- other manufactured products	44.0

Natural resources: copper, diamonds, forest products and cobalt.

(a) CEPGL integrated forest industrial complex

92. Since 1981, the ECA Forest Industries Advisory Group identified the characteristics of a forest industrial complex that is likely to meet CEPGL demand in forest products such as sawn wood, boards, plywood and core boards.

93. Since then, many activities have been carried out especially those that seek to effectively execute the project. In 1985, the identification of a forest area likely to supply raw materials to the complex was conducted and concession was granted for the exploitation of the Wanie-Rukula forest near Kisangani. The site on which the factory was to be constructed was identified and the land demarcated by the Survey Department. Since 1986, all actions have been geared towards preparing the application file in accordance with Zaire's legislation in force.

94. The following five studies were conducted:

(a) Market study on CEPGL countries: this study was undertaken in 1982 and updated in 1986;

(b) A forest inventory of the Wanie-Rukula area was compiled in 1987;

(c) Organization of forest exploitation: the study was conducted in 1988;

(d) Designing of the timber processing factory to be established in Kisangani;

(e) The project's financial analysis: the study was carried out in 1989.

95. Each study corresponds to specific terms of reference prepared by FAO. As regards the designing of the timber processing factory to be established in Kisangani, these terms were supplemented by an FAO note Ref. No.DP9/10 RAF/82/046 of 13 February 1989.

96. The project seeks to establish in Kisangani a production plant for wet and dry sawn wood, plywood, boards and core boards, and in the long-run, a plant for the production of sliced veneer to be marketed internationally. Raw materials to this factory would come from the Wanie-Rukula forest area located a few kilometres away from Kisangani.

97. The initial production programme is as follows:

Industrial product	1990	2000
Plywood	11,000	23,000
Core boards	4,000	4,000
Sliced veneer	0	2,000
Sawn wood	15,000	27,000
Charcoal		
Log supply	60,000	120,000

These values are given in maximum m^3 produced or consumed a year.

(i) Market study

98. The study was focused on Upper-Zaire, Kivu, Rwanda and Burundi. It would appear the demand is substantial. It is evaluated in thousand m^3 as follows:

	Product	East Zaire	Rwanda	Burundi
1990	Fuel wood	13,500	8,900	6,300
	Lumber	80	40	30
2000	Fuel wood	17,300	12,400	8,400
	Lumber	100	50	40

99. CEPGL lumber needs evaluated in the m^3 of timber stood at 150,000 m^3 in 1990, and considering the expected increase in population, these demands should increase to 190,000 m^3 by the year 2000.

100. The break-down of this demand is as follows:

1990: sawn wood 52,000 m^3; boards 13,000 m^3
2000: sawn wood 63,000 m^3; boards 16,000 m^3

101. Current lumber supply is as follows:

	1990	2000
Sawn wood	26,000	35,000
Boards	13,000	16,000

102. The commercial success of the project will depend on how the problems raised by the import and export taxation system in the various CEPGL countries are solved. The protocol to liberalize the trade of goods of origin is of special importance.

(ii) Forest inventory

103. The inventory of the Wanie-Rukula region of Upper-Zaire and the Ubundu area was carried out by Spiaf in 1987.

104. This inventory which was conducted over 384,236 hectares, disclosed a total volume of currently exploitable species of 40,483,873 m^3 in the whole area.

105. Of the forest area, 81.7 per cent is made up of productive and accessible lands, the primary forest accounting for 77.5 per cent of the allocated territory. The DHC stratum which is most interesting alone covers 54.5 per cent of the area.

106. The total stands of timber-trees are is 14,236,143 m^3.

107. The category I species are relatively fewer in the stands to be exploited. This category essentially comprises mahogany and imitation mahogany.

108. The volumes given in the above tables are the gross volumes that can be exploited for trunks of one diameter more than the minimum usable diameter (MUD).

109. The SA and SG strata can be exploited in the same manner as the DHC stratum. They are relatively rich in peelable tree-trunks.

110. The DHS-G stratum, which is very rich in Limbali will be exploited only very slightly because it has a low supply of peelable tree-trunks.

(iii) Organization of forest exploitation

111. The Wani-Rukula forest area was chosen to supply Kisangani because of its abundant peelable tree-trunks species, its proximity to the factory (10 km) and its accessibility by roads 425 and 418.

112. On the average, the volume of exploitable logs shows:

Stratum SA	-	exploitable volume: 119 m^3/ha
Stratum DHC	-	exploitable volume: 78 m^3/ha
Stratum DHS-G	-	exploitable volume: 139 m^3/ha
		Average: 92 m^3/ha

113. The real usable volume, i.e., the timber volume, is about 60 per cent of the total log volume analyzed above. The forest exploitation will therefore focus on:

(a) Stratum SA 71 m^3/ha i.e. an exploitable potential of 1,856,000 m^3; and

(b) Stratum DHC 47 m^3/ha i.e an exploitable potential of 9,775,000 m^3.

114. The annual forest production programme per species during the first five years will be: commencement of timber production during the first year. That is to say, during the second year after the project starts. The main equipment to be used include civil engineering and conveyance

equipment, light felling and logging equipment, handling gear, haulage facilities and repair tools.

115. The project's main characteristics are:

Total investment :	$US 5,300,000
Employed manpower:	109 people three of whom are expatriates
Cost price of m^3 delivered to factory:	$US 42.33

116. With the nearness of the factory no living quarters will have to be built on the forest exploitation site and this will make it possible to optimize investment and exploitation costs.

(iv) Study on the Kisangani industrial plant

117. The factory will be established 13 km to the east of Kisangani, on about 10 hectares land bordered by two tarred roads. Water and electricity supply is easy. Buildings to be constructed will occupy an area of 18,648 m^2.

118. Estimated production is 30,000 m^3 of marketable products broken down as follows:

Wet sawn wood:	11,000 m^3/year
Dry sawn wood:	4,000 m^3/year
Plywood:	11,000 m^3/year
Core boards:	4,000 m^3/year

119. These outputs should double by the year 2000 i.e. during the second phase. The study deals only with the first phase. The quantity of waste that the company will not use in its energy production should yield 2,000 tons of charcoal which should be produced by local charcoal dealers.

120. The total investment of the industrial plant amounts to:

Expenditure in foreign exchange:	$US 9,500,000
Expenditure in Zaires:	$US 8,000,000

121. The general conception of the production lines is:

(a) A semi-mechanized sawmill comprising two inter-linked production lines. Upstream of the mill, there is a series of hot air-conditioned dryers that make it possible to market dry sawn wood;

(b) A workshop for the production of dry peeled veneer comprising two stripping lines and a high-performance jointing facility;

(c) A workshop for the manufacture of sliced veneer;

(d) A boards pressing and finishing line.

122. All the services, namely heating plant, maintenance, tool sharpening, spare parts store, were grouped into one technical building.

123. Total number of people to be employed will be 620, broken down as follows:

Line staff:	610
Local senior staff:	3
Expatriate senior staff:	7

124. Assuming that the project start when funds have been mobilized, the construction of the factory will last for 21 months. However, the going into operation of the various workshops will be scheduled as follows:

Sawmill starts: 15th month: full production: 22nd month;
Plywood manufacture starts: 21st month; full production: 25th month;
Core boards manufacture starts: 22nd month; full production: 25th month;

125. Consequently, production building will be as follows:

	Year I	Year II	Year III
Sawn wood	0	8,715 m^3	15,000 m^3
Plywood	0	1,620 m^3	1,000 m^3
Core boards	0	455 m^3	4,000 m^3

Financial analysis of the project

126. The financial analysis starts as from the first year of production i.e. the second year in relation to the project starting date.

127. It has been variously assumed that: in the course of time, costs and selling price will vary in the same way and in the same proportions.

128. The project enjoys advantages contained in the investment code applied in Zaire.

129. The company shall benefit from conventions governing CEPGL countries.

130. Financing could be secured through:

(a) Bank loan of about $US 10 million at an interest rate of 13 per cent a year;

(b) Supplier credit of about $US 9 million at an interest rate of 17 per cent a year.

131. The balance shall be made up by the company's own resources.

132. Estimated financial statements shall comprise:

(a) Balance sheets;

(b) Operating accounts;

(c) Financing tables;

(d) Profit and loss accounts.

133. These various accounting documents shall be established over five years of activity.

134. Obviously, net results are negative during the first four years of operation and only become positive as from the fifth year. Conversely, the cash flow will be positive as from the second year.

135. Estimates for overheads and the selling fees appear under the operational accounts; during the year of maximum operation, they will account for 38 per cent of the turnover.

136. Two additional hypotheses were adopted for selling prices, the latter taking into account selling prices that exceed those applied on the Zairian market by 5 per cent. Under the second hypothesis, the company becomes profitable as from the third year.

137. The total amount of investment reveals:

Expenditure in local currency:	$US 8,271,005
Expenditure in foreign currency:	$US 14,772,318
Total investment:	$US 23,043,323

138. The selling price is calculated per section and per product. It takes account of the build up in production, cost factors and the price of raw materials. They are established ex-factory but excluding overheads. During the year of maximum operation, the cost prices will be as follows:

Timber:	$US 43.36 per m^3
Sawn wood:	$US 145.07 per m^3
Plywood:	$US 253.43 per m^3
Core wood:	$US 255.76 per m^3

139. In addition to this, it is necessary to add transport costs which will depend on distances covered and the state of the road network, as well as overheads broken down according to the selling price paid on delivery.

(b) Intensive production and marketing of maize in the CEPGL countries

(i) Maize in CEPGL countries

140. Maize production in the CEPGL countries increased from 700,000 tons in 1975 to about 1,035,000 tons in 1987. Its growth rate during the period was not considerably higher than that of the population in spite of efforts made in research.

141. Improved-seed multiplication and distribution structures as well as those for teaching farmers techniques suited to such seeds are still inadequate both in quantity and quality. Those existing lack appropriate seed transport and storage facilities.

142. Maize production is concentrated in certain areas of the community. This is the case with the regions of Upper-Zaire, Equateur and Bandundu in Zaire which account for 47 per cent of total maize production. But then most of the maize projects are in the regions of Shaba and of the two Kasais which are the greatest maize consumers (64 per cent of Zaire's total needs in 1985). In Rwanda, much of the maize production comes from the highlands of the lava region in the Rubengeri and Gisenyi Divisions, which is also the greatest consumer, and from the Zaire-Nile crest in Kibuye Division. However, research has not discovered high-yield, early-maturing and disease- resistant varities adapted to this region of an altitude of more than 2,000 metres. In Burundi, the greatest maize production comes from the high altitude regions of Magamba and Bututsi, followed by the North-Imbo region in the Ruzizi plain.

143. None of the CEPGL countries produces maize in excess of its own demands and with the Economic Community of the Great Lakes Countries importing maize and its by-products, such a study is of major importance to the countries concerned.

144. Maize, introduced in the seventeenth century in the three countries of the Gisenyi-based MULPOC (Burundi, Rwanda, Zaire) all CEPGL member countries, is cultivated to varying degrees in all the eco-climatic areas of the subregion.

145. It is the first cereal produced in Burundi, followed far behined by sorghum and rice, just as in Zaire where it outstrips the second cereal (rice) by almost 400,000 tons. In Rwanda, maize comes second after sorghum among the cereals produced. Thus, maize is the main cereal cultivated in the CEPGL countries.

146. Maize is a plant that needs light to synthesize starch. The lack of light can reduce its yield. Generally, it develops better at an altitude ranging from 750 to 1,500 metres. In another connection, it has temperature requirements that can affect germination, and its fertilization can be disturbed when the temperature exceeds 35°C and when the air is very dry. Temperature influences the duration of its growth cycle; especially, when the heat needs between the planting and flowering stages are compared. Temperature diminishes with altitude and for the same variety, the growth cycle can take once or twice as long depending on the altitude.

147. Optimum maize growth and development require well defined ecological conditions: average temperature of 19°C, a monthly rainfall of about 100 mm, good quality soil that is rich in humus. And, in as much as these conditions are not met, the generative growth cycle is disturbed, and the yield drops. Applied research is, however, striving to create clones suited to the various areas.

148. That is why the three CEPGL countries have been able to have a relatively high production in spite of periodic differences in climate and conditions.

(ii) Marketing of maize

149. Of the three countries of the Economic Community of the Great Lakes Countries, Zaire has the largest maize market owing to its population (33 million in late 1987) and the food habits of its inhabitants. Indeed, maize is the staple food of the population of Shaba and the two Kasais, i.e. 9.5 million inhabitants or 28.68 per cent of Zaire's population in 1987.

150. In Rwanda and Burundi, only the high altitude regions, lava soils and the Zaire-Nile crest, are the greatest maize consumers. The consumption of maize per capita and per year was more than 35 kg in 1979 in Burundi and in 1983 in Rwanda.

151. In both countries, the greatest maize producing regions are also the highest consumers of this foodstuff. Domestic consumption is high and very little is marketed. The situation is different in Zaire. The greatest producing areas (Upper-Zaire, Equateur, Bandundu and Kivu) are not the greatest consumers. It could have been expected that intensive production would be developed in the high producing maize areas (Kivu, Bandundu, Haut-Zaire...) so as to supply Shaba and the two Kasais. In fact, the absence and the poor nature of the communication network have caused efforts to provide guidance and inputs (good seeds, fertilizers, phyto-sanitary products, agricultural tools and machines) to be concentrated in areas of high consumption. Marketing is limited to the regions, especially in Western Kasai, the region of Kivu in Eastern Kasai and that of Upper-Zaire in Western Kasai and in Kinshasa.

152. Inadequate and poor road network impedes the evacuation of crops from high yield areas, and given that preservation and storage facilities are precarious, post harvest losses go up to 60 per cent.

153. Since producer in high-yield areas do not have facilities to sell the surplus production, they produce only for subsistence. Thus, no efforts are made to use inputs and improved techniques, and to maximize production.

(iii) Estimated needs in maize

154. The Zaire agricultural studies and planning service has assessed the food needs of each administrative region.

155. With regard to maize, the estimates were made on needs for human consumption, seeds, animal feed and post harvest losses.

156. Regarding human consumption, the needs were estimated in terms of the population composition: those below 15 years, men and women. That is why in Shaba, annual needs are estimated at 148 kg for men, 108 kg for women, and 19 kg for children. With regard to Eastern Kasai, the estimates are 85 kg for men, 61 kgs for women and 49 for children. These needs decrease gradually from the east to the west to reach 9 kg for men, 7 for women and 5 for children in Lower-Zaire.

157. In Burundi and Rwanda, estimates were based on findings from a survey carried out on household consumption in 1979 in Burundi and in 1983 in Rwanda. In Burundi, maize consumption was 32.68 kg per person and per year in 1979 whereas it was 20 kg in Rwanda, in 1983.

158. Estimated needs in maize for 1987 and 1990 are given in the table below. Besides needs for human consumption and seeds, these estimates have also taken into account animal feed and post-harvest losses, which in certain regions, could reach 15 per cent of the production.

Table 5: Needs in Maize
(in thousand tons)

Country	1985			1987			1990		
	Total	Hum.cons.	Seeds	Total	Hum.cons.	Seeds	Total	Hum.cons.	Seeds
Zaire	1,382	1,116	70	1,437	1,171	74	1,532	1,251	79
Rwanda	156	127	3	167	137	3	185	152	4
Burundi	191	156	4	203	166	4	221	181	5

159. In order to cover maize needs of 1,474,000 tons for human consumption, in 1987, the CEPGL countries produced 1,055,000 tons (771,000 in Zaire, 174,000 in Burundi and 110,000 in Rwanda). The shortfall was 419,000 tons to which should be added 82,000 tons of seeds, i.e. 501,000 tons in all. Officially, in 1987, Zaire imported 4,100 tons, Rwanda 3 tons of maize and 1,885 tons of corn flour, while Burundi did not import grain maize or corn flour in 1987. The shortfall is therefore substantial, but there is cross-border trade between Shaba and Zambia. Sometimes, this trade not recorded by the customs.

(iv) Proposed subregional maize research/development network

a. Current research on maize in the Great Lakes subregion

160. As an introduction to the proposal to establish a subregional maize research and development network for the Great Lakes Countries, we shall briefly examine the low productivity of maize and lay emphasises on maize research as well as survey prospects for subregional co-operation in this area.

b. Brief overview of low maize productivity and the achievement of self-sufficiency by the year 2000

161. Average maize production in the whole region has never exceeded one ton per hectare during the past ten years. The highest average yield per hectare was recorded in 1986 when it was only 940 kg per hectare whereas the African average largely exceeded 3,000 kg during the same period. It will therefore be noticed that the maize self-sufficiency rate will continue to drop in the three countries if the present trend is maintained. Thus, with self-sufficiency rates of 0.96, 0.89 and 0.78 for Burundi, Rwanda and Zaire respectively, none of the three countries would be able to cover its maize needs in the next ten years.

162. The purpose of establishing a subregional maize research/development network for the three Great Lakes Countries, is to intensify activities already planned and carried out by the national governments in the area of maize research and development in co-operation with international maize research centres and networks, especially with support from donors. The primary objective will be to improve the productivity of maize cultivation or the maize-based cultivation systems and to increase maize production in the subregion so as to achieve food self-sufficiency.

163. Such a network will seek to harmonize and enhance activities by creating a centre for subregional co-operation in maize production. It will provide a framework for the exchange of information and genetic material as well as for participation in research planning along with popularization and training activities in order to ensure better use of resources.

(c) Integrated development of industrial fishing in the CEPGL

164. For the next five years, it appears more appropriate that CEPGL countries adopt in the area of fishing and fish farming, a strategy that mainly seeks to build on what has been accomplished and to increase knowledge in the dynamics of fishery stocks.

165. Such building on what has been achieved would take the form of action taken in the entire small-scale fishing sector to improve the economic and social conditions for current semi-industrial fishing, while increased knowledge on the dynamics of fishery stocks would, in the long run, lay the groundwork for sound planning of possible industrial development. Research must exclusively seek to provide satisfactory answers to fishery development problems.

166. In the area of fish farming, such efforts will be concentrate on continuing and strengthening cottage fish farming culture programmes, which should make it possible, in addition to meeting domestic consumption needs, to create and develop the prospects of a profitable commercial activity. Research and development effort on new breedable species, possibly assisted through bilateral co-operation, would enable the subregion to better grasp the opportunities and potential of breeding new species.

(i) Proposed actions and programmes

167. They concern, mainly, the fish farming and traditional fishing sector. For such semi-industrial fishing as currently exists, the aim is simply to improve the economic and social conditions under which it is conducted.

a. Actions and programmes relating directly to the production activity (Fishing and fish farming)

Fishing

(a) Programme to improve square dipping-net fishing technique (size-hauling speed) cf. effect on the prey-predator relation;

(b) Programme to conduct experiment on new fishing techniques (gillnet, drift net, set-net, spiral drag seine adapted to canoes, etc.) and to train fishermen; cf. effect on operating costs and on prey-predator relation;

(c) Measures to improve the economic and social conditions under which people practise semi-industrial fishing: besides problems resulting from a drop in catches, this fishing sector is currently encountering difficulties relating to:

(i) The supply of imported intermediate consumer goods (nets, cordage, lamps, fuel, spare parts etc.);

(ii) The taxation system that is severely affecting the prospects for self-financing, thereby limiting the possibilities of renewing immobilized assets;

(iii) Conditions of access to existing infrastructure and port facilities; and

(iv) The existence between economic operators and administrative and control services, of an atmosphere inimical to maximum economic performance.

168. It is advisable, wherever this is applicable, that the competent authorities and the economic operators concerned should, within a dialogue committee, examine, together, all these problems in order to decide on and ensure the effective application of all the measures deemed useful.

Fish farming

Subregional development programme for cottage Tilapia industries.

Preproduction actions and programmes (fishing and fish farming)

Fishing

(a) Programme to organize the supply of inputs (fishing gear, lamps, fuel, spare parts). This programme can provide a genuine opportunity to promote national economic operators selected according to satisfactory criteria (cf. project idea). The objective is to establish an appropriate structure for selecting, financing and monitoring the management of operators who import one or several fishing inputs through the marketing of products;

(b) Improvement of local techniques for the renovation of small-scale fishing vessels (cf. project idea);

(c) Popularization of techniques to assemble fishing gear in order to increase the efficiency of those already used and perfect, on a large-scale, those likely to be introduced after experiments (project idea).

Fish farming

(a) Subregional programme for fish-farming training and popularization of Tilapia Nilotica fish culture at altitudes ranging from 1,500 to 1,800 m;

(b) Finalized aquaculture research programme on themes and, for subjects defined by development practicians and fish farmers themselves,in terms of practical problems in the field (problem of predators, preparation of accessible composite foods etc...);

(c) Research and development programme for new breedable species;

(d) Subregional programme for concerted action, and exchange of information on and harmonization of national development policies.

169. This programme will mainly be based on regular meetings of fish-farming developers administrators, extension and research workers for concerted action and the exchange of information as well as on the publication of a common information leaflet.

Post-production actions and programmes

Fishing and fish farming

(a) Programme to improve such techniques for the processing of fishery products as drying and smoking. In most cases, these two techniques are currently being used in the most rudimentary manner (drying on the ground moking in an open area), and given storage problems, the end result is poor quality products nd sometimes considerable losses (cf. project idea);

(b) Promotion of national and intra-subregional trade of fishery products through a study on and search for solutions to problems relating to costs and prices in relation to revenue level and variation (cf. project idea).

Fish farming

Programme to improve traditional techniques for tilapia processing and packaging.

(d) Establishment of a subregional production and distribution programme for selected seeds of rice, beans and soya beans in CEPGL countries

170. The studies conducted on the three crops reveal the following facts: the beans crop ranks first among the pulses cultivated in Burundi and Rwanda. In Zaire, it ranks second among the edible pulses. Soya bean is a recently introduced crop that has yet to become a staple food but which is expected to arouse greater interest due to its nutritive value. In Zaire, it has already become a staple food. It should be noted that rice has been overtaken by maize and sorghum in Burundi and Rwanda, and only by maize in Zaire.

171. Generally speaking, the seeds sector in the three countries include:

(a) Research structures (ISABU in Burundi, ISAR in Rwanda, INERA and RAV in Zaire);

(b) Seeds production structures (SSS, SRD and development projects in Burundi, Projects SS and rural development projects in Rwanda, nurseries, private enterprises, development projects, religious bodies in Zaire);

(c) Popularization services in charge of distributing and marketing seeds to farmers (SSS,SRD, Department of Agronomic Projects and Service in Burundi; agricultural projects and service of the Ministry of Agriculture, Livestock and Forestry in Rwanda; BUNASEM development projects, religious bodies in Zaire).

172. The study brought out problems encountered in seed multiplication and distribution in each country as well as current or envisaged ways and means of solving these problems at the level of either research or production and distribution.

173. As regards ways and means, and particularly, seed multiplication and distribution, mention can be made of the need to define the seed policies of member States in their national seed plans. The execution of the such plans in Burundi and Rwanda will soon start. That of Zaire is already being implemented.

174. Before presenting the project, the study made recommendations on agronomic research and on seed multiplication and distribution.

175. The chapter relating to the project comprises four sub chapters:

(a) The first defines the objectives and presents the project's components;

(b) The second describes components in detail;

(c) The third describes the programme organization in the national plan and the system of subregional co-operation; and

(d) The fourth gives an economic and financial evaluation of the project.

176. Each national seed programme proposed, takes account of the various stages of seed multiplication: stock, basic and commercial seeds.

177. The commercial seed multiplication method will be completely mechanized and applied on farms directly managed by the project in Zaire while two methods will be applied in Burundi and Rwanda, namely: production on farms directly managed by the project and production by the seed-multiplication farmers.

178. On farms managed by the project, mechanization should be used wherever possible and the project should, moreover, provide guidance to the farmers multiplying seeds.

179. Regarding national and subregional programme organization, it is necessary to note that in each country, research organization, seed multiplication and distribution, will be carried out in accordance with the strategy defined in the national seed plan.

180. The system of subregional co-operation proposed by the study chose the Institut de Recherche agromique et zootechnique (IRAZ) as focal point of the system.

181. Lastly, it should be pointed out that an economic and financial evaluation of the project has been conducted.